

ART. XXV.—*On some Hydraulic Clock-weights.* By
F. MACGEORGE, ESQ.

[Contributed 12th June, 1871.]

This was an oral description, illustrated by a diagram of a method of winding up turret clock-weights by water power. The principal features in the proposition were, an arrangement by which water was admitted into a cylinder as soon as the clock-weights had descended to a certain level. The piston was thereby raised, lifting the clock-weights the length of its stroke again; so soon as the weights reached their highest position, the inlet valve was closed and outlet opened, when the piston would fall to the bottom of cylinder, leaving the weights free to act on the clock. The winding up of the going barrel of the clock was done by a counterpoise weight sufficient to draw back the barrel against the friction of the spindle and ratchet click. The fall of the weight would be of course regulated by the stroke of the piston, and the writer proposed that a fall of one or two hours would probably be found most convenient in practice for ordinary turret clocks.

ART. XXVI.—*Suggestions for the Improvement of the Mariner's Compass.* By E. J. WHITE, ESQ.

[Read, 12th June, 1871.]

The recent loss of the *Queen of the Thames* steamship, owing, in a great degree, it is said, to the erroneous action of the compasses, has led me to consider whether an improvement could not be made in what I may term the mathematical part of the subject; that is in the division and notation of the card. The present system was adopted at a time when the compass was supposed to point always to the true north, and was, perhaps, under this condition simple enough for the purpose. We have now, however, so many corrections to be applied to the reading of the compass before we can determine the true course, that it is quite astonishing how the present cumbrous method should have held its ground so long. The system of dividing circles, which have to be read round the whole circumference, into quadrants, or semi-circles, has been abandoned by astro-